NBC NEWS SPECIAL REPORT - THE SHUTTLE BEGINS (4-9-1981)

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From the late evening of Thursday, April 9th, 1981 NBC NEWS Special report with NBC News John Chancellor on the upcoming flight of STS-1, America's first Space Shuttle mission. The flight was planned to take off at 6:50 A.M E.T the following day. However, due to computer issues it was postponed 48 hours and successfully launched at 7:00 A.M E.T on Sunday, April 12th, 1981.

- Coverage runs from 11:35 P.M E.T - 12:05 A.M E.T

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the tonight show and the tomorrow show will each begin one half hour later so that we may bring you the following nbc news special report [Music] from the kennedy space center at cape canaveral florida nbc news covers the flight of columbia the shuttle begins here is nbc news correspondent john chancellor that is the spaceship columbia on the launching pad at this hour and its huge external fuel tank is being filled with liquid hydrogen and liquid oxygen a tricky and dangerous task good evening everything has gone well here all day at the kennedy space center the countdown has proceeded smoothly and the technicians at one time were ahead of schedule the launch is expected to take place on schedule at ten minutes before seven in the morning eastern time the only variable at the moment is the weather and at this hour it's a perfect evening here at the cape but conditions here can change very quickly what would be a problem would be too much cloud cover or too much wind if the mission got into trouble after launch the astronauts would have to land here and tail or cross winds could endanger that landing but so far no problem and with more on the weather here is frankfield at the cape canaveral weather station john the radar at the cape canaveral weather station shows no adverse weather within quite a range in fact the cold front that was moving this way with its scattered showers has become stationary well to the north of us how much of a range do we cover sergeant we're covering 200 nautical miles frank and there's no precipitation echoes within this area so within 200 miles around the cape there's no adverse weather in addition

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there's no adverse weather in addition to that there are 14 wind stations around the cape that show favorable conditions there is also a lightning detection system that we're watching very closely and furthermore the satellite photographs continue to come in regularly and they show good weather conditions around the globe here at the cape itself the weather remains good also at the primary landing site at edwards air force base the weather there too remains good and the back up site north rip strip white sands while the winds are a little gusty there there too the weather is good so the weather john is a go thank you frank this is a model of the whole shuttle configuration that's the shuttle itself and these are the fuel tanks which will send it into space these two things that look like skyrockets here actually are they're solid fuel boosters that will jump everything off the pad they will be jettisoned uh into the mission two minutes into the mission recovered by parachute nothing this large in a solid field rocket has ever been sent into space before now this behemoth of the fuel tank here is being filled now with liquid oxygen and liquid hydrogen and that fuel flows into the shuttle itself and powers these engines which will also help to get it off the pad and into orbit and once it gets up this will be jettisoned and will burn up over the indian ocean the shuttle itself incidentally is a spaceship now but when it comes down in california it becomes a glider with no power at all it will drop like a stone and land on schedule we hope at edwards air force base that's the shuffle and that's the story of the outside of it sandy gilmore picks up the story of what goes on inside and he reports from houston this is a very accurate reproduction of the cockpit of the spaceship colombia we have reproduced it for you here at nbc in order to bring in experts to explain every detail of the astronauts flight everything has been reproduced here including hundreds of knobs dials switches and warning lights which will tell the astronauts exactly

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which will tell the astronauts exactly what is going on throughout the spaceship for example on the front panel here three television cathode ray tubes which display computer flight information there are five computers aboard the columbia one computer to keep track of the other four we have also reproduced some of the manual flight controls that the astronauts will use to land here on earth for example the stick similar to a stick used to control a military fighter aircraft and there is also a speed control lever aboard that the astronauts will use to slow the columbia down prior to landing the columbia is the most complex flying machine ever built and with this simulator we will show you every detail of the astronauts operation of it sandy gilmore nbc news at the johnson space center in houston as for the astronauts themselves it's a veteran and a rookie the veteran is john young he is 50 years old and has been an astronaut for 19 years and this will be his fifth flight into space he's been in space as part of the gemini and apollo programs and he has been to the moon as a member of the crew of apollo 16. the rookie is robert crippen who is 43 years old and this will be his first time in space hence the tag of rookie even though he's been an astronaut for 12 years griffin was a member of the support teams for the skylab flights and the soyuz apollo mission and as the saying goes mr crippen has paid his dues in the space program so as preparations continue we see things about the flight of colombia that are routine and some that are not there have been problems with the tiles they must withstand the buildup of heat during re-entry and there have been problems with the propulsion system which must lift the vehicle and its fuel tanks off the pad we'll have that part of the story in a moment [Music] there's one unique aspect about the flight of the space shuttle unlike the

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flight of the space shuttle unlike the procedures followed in the mercury gemini and apollo programs the space shuttle will take off without having gone through any unmanned flight testing and that is a first there have also been setbacks involving key mechanisms in liftoff and reentry there were two serious engineering problems in the development of the shuttle the propulsion system which puts the orbiter in space and the heat tiles which protect the orbiter during re-entry these two problems not only delayed the project they remain a large question mark since neither system has ever been tested in actual flight first propulsion these new rocket engines were designed to be reusable unlike the old rockets which went up once and then burnt out on re-entry nasa made animated movies showing how easily the yet to be developed rocket engines would furnish a thrust of 375 000 pounds for liftoff and could be used for at least 55 missions and how other rocket boosters would be recovered and used over and over again the actual development of the rocket engines was started in 1971 and went well for several years nasa then decided for economic reasons to eliminate the expensive testing of each engine component part separately instead they went right on to assemble everything into a completed engine and then scheduled static firing tests this procedure was unorthodox if the smallest part malfunctioned the entire engine could be damaged and would have to be rebuilt from the start and there were malfunctions at least five major fires were caused when engines were tested engines were destroyed as well as important shuttle facilities there were long delays in rebuilding the engines damaged or burnt in testing but now many billions of dollars in a few years later than planned the engines appear ready for liftoff the second big problem has been heat tiles or thermal systems nasa developed a special material which could withstand the 3000 degree heat of reentry and

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the 3000 degree heat of reentry and still be reusable for many missions it is cut in blocks and glued to the orbiter surface each tile is unique every single one is precision machined to match the contour of the area it covers thirty one thousand tiles were required to cover the orbiter work was started on the tiles installation in california in nineteen seventy seven two years later with only part of the installation completed the orbiter was moved to the kennedy space center in florida many tiles were broken in transit the rest of the installation had to be completed at the space center a slow time consuming job about twenty seven thousand tiles had to be refitted measurements were taken at the space center in florida and sent to a factory in california where the tiles were machined to specifications and shipped back to florida each tile separately tested it took one person three weeks to install four tiles the tile installations have been expensive and very time consuming but these one-inch thick heat resistant tiles are the only protection against the orbiter burning up on re-entry for the earth landing the tiles have never been tested in the launch or re-entry into the earth's atmosphere and neither has the propulsion system and one of the astronauts considering these problems and delays plus the absence of unmanned testing is it their feeling that this flight is more dangerous than previous space missions the question was asked of both by tom brokaw during a recent interview like a part of this mission that is getting a great deal of attention before you go up is the fact that it is not flight tested for the first time uh are you aware of all that attention that's being written about and we're talking about it on the air and so on and does it affect your attitude in any way well we've been asked that question quite a few times for the press and it was john in my own my opinion that cheapest way to do this thing was to put men in it and because they offer a better chance

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and because they offer a better chance of and be success to handle situations that you couldn't program an automatic system to be able to handle and we claim to be test pilots so that's part of our job we think it's the right way to go fly but it's been ground tested enormously just like we tested all the unmanned vehicles that we flew in in chimney and apollo and of course if we had flown those unmanned vehicles in germany apollo with men in them they would have been just as successful as the unmanned tests were getting tired of the question no it's a good question and you know there's some some thought thought in uh in asking the question but one saying if you go back and look at the other programs we could have flown those man just as easily nobody would have permitted it but we could have done it in your quieter moments do members of your family or your friends say hey come on john you're bound to be nervous about this since it hasn't been flight tested i'm a little nervous about it publicly yeah i don't mind saying that you climb on top of a rocket uh space plane like this one a space space ship that's as big as this one that's loaded with liquid hydrogen liquid oxygen and has two large solid rocket motors alongside of it and you aren't just a little apprehensive you don't understand the problem and you know that's normal i've been that way for every space flight and i don't think this will be an exception that's normal he's right columbia was a long time getting here tonight the development of the space shuttle has been slowed almost from the start and that has made the program more expensive than originally thought we'll have that story in a moment [Music] the space shuttle that is scheduled to be launched from here tomorrow is not the one they first had in mind there have been a number of design changes and modifications nasa once thought the shuttle would be ready to fly in 1979 but those delicate and troublesome tiles we saw have accounted for much of the time lost as a result what began as a 5 billion

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as a result what began as a 5 billion dollar project has now become about 30 percent more expensive and there are still are people asking if the shuttle really is necessary robert hager reports on these cost overruns and what caused them after the moonwalk success and with thousands of jobs at stake nasa needed another big project officials there came up with a reusable shuttle idea nasa estimated it would cost about 10 billion dollars it got the go-ahead but for only 5.15 billion so nasa redesigned the shuttle cut out expensive testing made more revisions for military needs and still promised congress this compromise shuttle would be ready to fly by 1980 it promised too much it meant attempting a completely new space project with almost no margin for error with hundreds of sub-contractors there were mistakes and delays nasa's economy budget allowed for only a couple of backup engines when they blew up scheduling went way off waiting for new engine parts to be built cost the program over seven million dollars a day the refitting of the 33 000 heat resistant tiles caused more expensive delays nasa admitted it might not be getting the best value for the money spent the ways we had for counting money were excellent the ways we had for counting effort were not so good so sometimes you could be quite sure how much money you'd spent but it was more difficult to tell whether you had accomplished all of what you should have accomplished for that for that money congress's answer to all this was to spend more money on the project a 220 million dollar supplement in 1978 and another 185 million in january 1981 another 300 million dollars extra for the shuttle opponents of the shuttle can only see the costs going higher and higher for the two is going to cost more in my judgment more than the moonshot cost moonshot was uh less than 25 but in this is going to be

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is going to be in that neighborhood worth it well that question may be easier to answer when we find out if the space shuttle performs the way officials here hope it does robert hager nbc news at nasa headquarters in washington if the space shuttle is to pay off in the future it will have to deliver cargo into space clients would pay 35 million dollars for rental of the entire cargo bay on one trip or as little as three thousand dollars for a 60 pound experiment package and while the cargo bay will be empty on this flight it does have an important role on this flight if the doors don't open and shut correctly this shuttle will be forced to come back to earth ahead of schedule and the shuttle program will be set back again roy neal took a walk in the cargo bay simulator at the johnson space center the space shuttle orbiter the columbia is big it's 122 feet long and its wings span 78 feet but the biggest thing about the columbia is its payload bay or cargo hold if you wish that's 65 feet long and 15 feet across it can carry 65 000 pounds it's about the same size as one of those 18 wheel trucks that you see tooling along the highway carries enough that it could launch five unmanned satellites for the future date from orbit or it can hold a space laboratory complete with three scientists for up to 30 days and much like a trailer park the payload bay comes complete with hookups for electricity water and air this is a mock-up used as a simulator of the johnson space center but it's full size you may notice that the payload bay doors are open that's the way they will be in space must be as a matter of fact for inside those doors are radiators and that's how the spacecraft is cool if the payload bay doors were not to open the spacecraft would be forced to come back to earth this rockwell company animation shows in

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this rockwell company animation shows in quicktime how the doors open and close if all goes well we expect to see part of that operation on live television first the right hand door will be unlatched and then the left both astronauts are involved crippen running the computer which actually operates the doors young working the tv cameras which will tell crippen and mission control whether the doors are latching and unlatching properly assuming that everything works a big hurdle will have been passed the radiators will cool the spacecraft and the mission can continue past five orbits which is about as far as the shuttle can go if those radiators don't function the doors will stay open until a few hours before the shuttle heads for home then once again the astronauts will use the onboard television system to make sure that the doors are closed snugly and that the latches are secured the radiators won't work anymore after that the shuttle will be cooled by the water it has on board until it lands back on earth nasa has made a number of claims about the shuttle's long-range capabilities and some of these claims ought to be explained for example nasa once predicted a two-week turnaround for each orbiter right now that is impossible and some people say it's more likely that three or four months will be taken to service the vehicle between flights then there's the question of repair and recovery of satellites the expensive satellites used for communication and some of them cost as much as 75 million dollars orbit at 22 000 miles that is out of range of the shuttle some satellites in low earth orbit are within range of the shuttle but they are used for tasks like navigation mapping and environmental protection presumably a shuttle crew could recover or repair one of those but many of our satellites are just out of range of the space shuttle we'll be back with more in a moment

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tonight as the space shuttle columbia sits on its launching pad there are people who hope that we're about to start a new era in space travel and if that takes place the future owes a certain debt to the past to those little redstone rockets that went off from here many years ago in the tiny mercury capsules a debt as well to the seven original astronauts who proved that space flight manned flight was possible to others and to armstrong aldrin collins and their colleagues who walked on the moon the mementos and trophies of these last 20 years are on display here at the cape the space center is one of the most popular tourist attractions in the country all kinds of people have come here to look at that still some of these artifacts of the past in space are going to seed here and some say that pompeii is better preserved that's unfortunate because no matter what lies ahead what's gone before is worth remembering here's robert bazelle you get an idea of the pace of our space program in recent years by looking around the cape the marsh grass has reclaimed places that much of the world watched in the 1960s and early 70s places where atlas and redstone explorer and vanguard mercury and gemini began their pioneering journeys into space but all that stopped in the late 70s the entire manned space effort has been concentrated in the long delayed space shuttle project as the shuttle is finally about to take off it's a good time to recall some of those achievements of the past it began with dreams like those of french novelist jules verne his aeronauts rocketed off to the moon and floated back safely [Music] robert goddard was the quiet american genius whose primitive rockets revealed the first principles of a new science werner von braun built rockets for the nazis he and his men came to america to become the nucleus of the team assigned to put

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the nucleus of the team assigned to put the first man-made object into orbit but the russians did it first sputnik went up in october 1957. embarrassed america tried to catch up with vanguard eventually it succeeded but there were a lot of spectacular and costly false start [Music] april 12 1961 man made his first journey into space the man was a russian yuri gagarin nasa had to pretend to be thrilled at the soviet achievement a month later americans had something to cheer astronaut alan shepard made a sub-orbital fight a modest 15-minute jaunt but the american space effort was underway john glenn became the first american to orbit the earth and the other six original astronauts became national idols nasa progressed to the two-man gemini program in 1965. on television we watched men walk in space and perfect the techniques they would need to get to the moon apollo the moon landing program began in tragedy however astronauts grissom white and chaffee died in a rehearsal on a cape launch pad it was not until christmas 1968 that men the three men of apollo 8 got their first close-up view of the moon seven months later an age-old dream came true [Music] neil armstrong the first of twelve men all americans who would leave their imprint on the moon

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one day scientists are still working with the experiments they left the moon rocks they brought home look at the size of that rock after apollo the emphasis of the space program turned to long-term missions in space three astronaut teams spent weeks inside skylab a huge space laboratory the people who planned the shuttle program hope eventually to construct permanent space stations if the shuttle had gone up in time in fact it might have kept skylab from falling to earth the russians are also working towards permanent stations most of their missions of recent years have involved science in weightless conditions and of course far far in the future the visionaries say man will follow his marvelous unmanned vessels to the distant planets and see worlds that even jules verne never imagined and the next step in that journey according to the dreamers will be taken by the shuttle robert bazelle nbc news and so we come to this moment a few hours before the space shuttle columbia known around here as sts-1 for space transportation system is scheduled to lift off the pad launch control announced just a few minutes ago that everything was going normally the astronauts will be awakened a few minutes after two o'clock in the morning eastern time and be given breakfast of orange juice toast eggs and coffee by 20 minutes to five eastern time they will be in their space shoots aboard colombia at six o'clock eastern time tom brokaw and i will be on the air in this studio launch is scheduled for 6 50 and nbc news will cover it all so until tomorrow morning good night for nbc news

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